

Claims

1. Sleeve for mounting on carrier cylinders of printing machines with two flange rings at the ends, on which a cylindrical outer sleeve wall and an inner sleeve wall are supported at a distance from each other, characterised in that the outer sleeve wall (20) comprises a fibre composite material with at least one layer of a carbon fibres-nonwoven sheet (21), and in that between the two flange rings (11, 12) at least one support ring (40, 40A) is arranged which supports the outer sleeve wall (20) vis-à-vis the inner sleeve wall (30).
2. Sleeve in accordance with claim 1, characterised in that several support rings (40, 40A) are arranged or formed between the two flange rings (11, 12).
3. Sleeve in accordance with claim 1 or 2, characterised in that the fibre orientation of the carbon fibre of a least one layer of the carbon fibres-nonwoven sheet (21) is 90° relative to the sleeve axis (A).
4. Sleeve in accordance with any one of claims 1 to 3, characterised by several layers of preferably unidirectional carbon fibres-nonwoven sheets (21), more particularly eight to fifteen layers of carbon fibre sheets.
5. Sleeve in accordance with any one of claims 1 to 4, characterised in that the fibre orientation of the carbon fibres of at least one carbon fibres-nonwoven sheet is 45° relative to the sleeve axis.
6. Sleeve in accordance with any one of claims 3 to 5, characterised in that several layers of carbon fibres-nonwoven sheets have the same fibre orientation.
7. Sleeve in accordance with any one of claims 1 to 6, characterised in that the carrier fibre of the carbon fibres-nonwoven sheet has low rigidity characteristics and/or consists of textile material.
8. Sleeve in accordance with any one of claims 1 to 6, characterised in that the carrier fibre of the carbon fibres-nonwoven sheet has high rigidity characteristics and/or consists of a glass fibre.

9. Sleeve in accordance with any one of claims 1 to 8, characterised in that the outer sleeve wall (20) comprises a carbon fibre – glass fibre hybrid and preferably comprises fibres-nonwoven sheets with carbon fibres and glass fibres.
10. Sleeve in accordance with any one of claims 1 to 9, characterised in that the carbon fibres in the carbon fibre sheet (21) are arranged in bundles and the bundles (22) are arranged relative to each other by way of the carrier fibre.
11. Sleeve in accordance with any one of claims 1 to 10, characterised by a winding with carbon fibres surrounding the carbon fibre sheet(s).
12. Sleeve in accordance with any one of claims 1 to 11, characterised in that the matrix in which the carbon fibre sheet is embedded comprises an ester, preferably a vinyl ester.
13. Sleeve in accordance with any one of claims 1 to 12, characterised by a function surface (25), preferably designed as a coating, forming the outer surface of the sleeve, whereby the function surface (25) is preferably electrically conductive and at least one discharge element (60) for discharging electrostatic charges is arranged in one of the flange rings, which when assembled connects the function surface with the carrier cylinder.
14. Sleeve in accordance with any one of claims 1 to 13, characterised in that the two flange rings (11, 12) have an end-side outer flange collar (17, 18) which annularly projects beyond an external surface area (13', 14') of the flange ring (11, 12), on which the outer sleeve wall (20) is supported, and delimits the external sleeve wall (20) at the end.
15. Sleeve in accordance with any one of claims 1 to 14, characterised in that the two flange rings (11, 12) have an end-side inner flange collar (17A, 18A), whereby each flange collar (17A, 18A) annularly projects beyond an inner wall area (13'', 14'') of the flange ring (11, 12) on which the inner sleeve wall (39) is supported and delimits the inner sleeve wall (30) at the end.
16. Sleeve in accordance with any one of claims 1 to 15, characterised in that at least one of the flange rings (11, 12) is provided with a boring system to act in conjunction with a compressed air system of the carrier cylinder (1), whereby preferably the

boring system in the flange ring (12) has at least one radial boring (75) with an opening (76) on the sleeve outer wall and/or the boring system has at least one axial boring (71) that is connected to a supply channel, opening into a radial boring (79), in at least one support ring (40).

17. Sleeve in accordance with claim 16, characterised in that the axial boring (71) of the boring system in the flange ring (11) is connected with the supply channel (81) in the support ring (40) via pipeline (80) and/or the supply channels of different support rings are connected to each other by means of pipelines (80).
18. Sleeve in accordance with claim 17, characterised in that the boring system has a single feeder (72) to the inner sleeve wall (30) whereby the latter is provided with a circumferential groove (31) on the inner side, into which the single feeder (72) opens.